

Fig. 1: Ideal star + planet light curve (black) with a phase offset (dashed red); the stellar flux is the dotted line. At a given wavelength, atmospherics make a planet's nightside hotter relative to its dayside.

We use features in light curves to estimate day and night temperatures² of Hot Jupiters—in the future, terrestrial worlds! This lets us infer (Fig. 2) a planet's Bond albedo (its reflectiveness) and heat recirculation efficiency^{2,3} (its day-night transport), which both impact habitability.

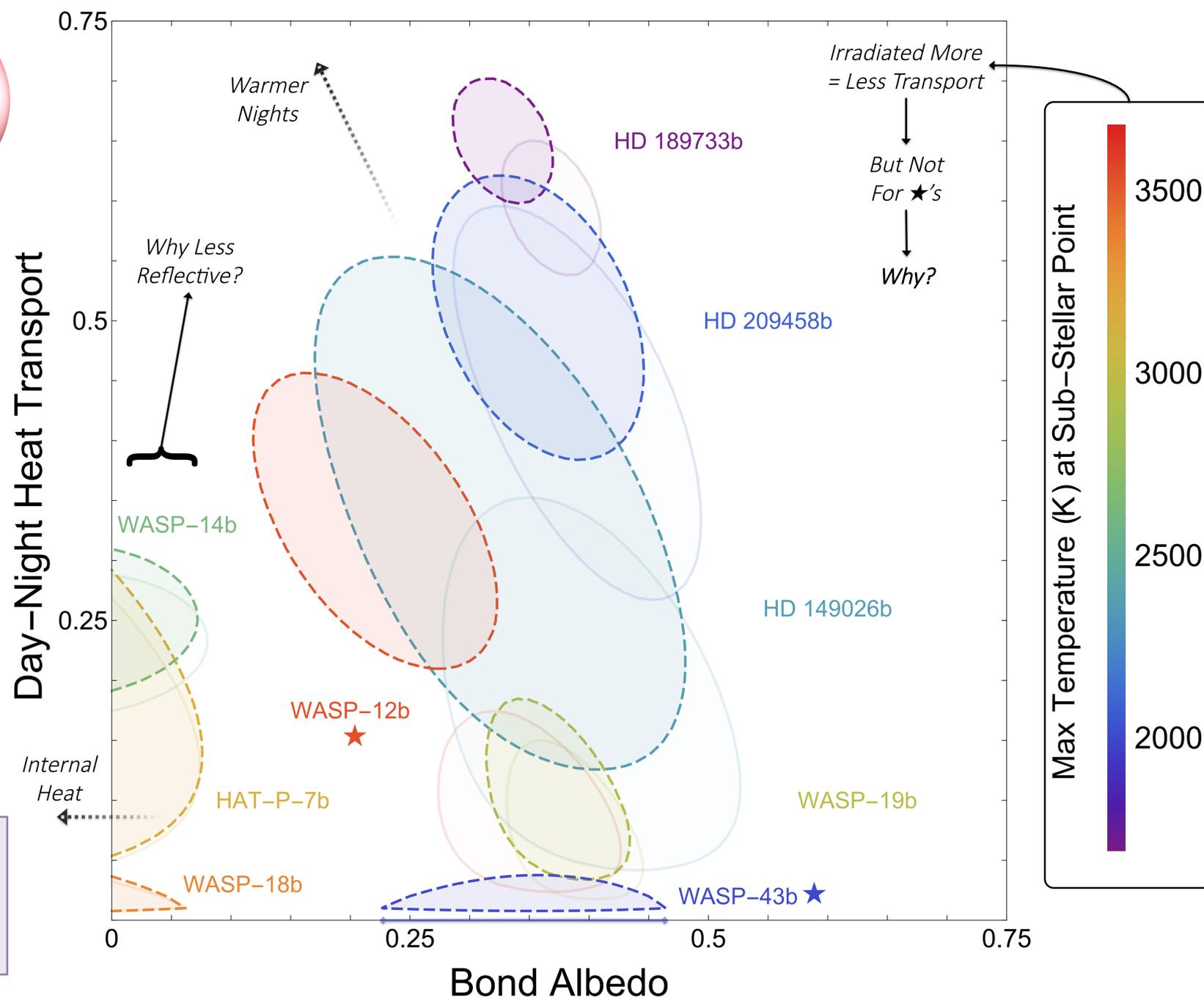


Fig. 2: Where planets live in albedo-transport space. Solid regions ignore phase offsets; dashed regions include them. Seeing bigger phase offsets in a planet's light curves means that world absorbs more starlight and moves more heat day-to-night through its atmosphere.



More
Info:



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References

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